



**Consumer Federation of America**

**TESTIMONY OF  
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DIRECTOR OF RESEARCH**

**ON**

**GASOLINE PRICE VOLATILITY**

**SENATE COMMERCE COMMITTEE,  
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Mr. Chairman and Members of the Committee,

My name is Dr. Mark Cooper. I am Director of Research of the Consumer Federation of America. The Consumer Federation of America (CFA) is a non-profit association of 300 pro-consumer groups, which was founded in 1968 to advance the consumer interest through advocacy and education. I greatly appreciate the opportunity to appear before you today to discuss the problem of rising gasoline prices and gasoline price spikes.

**THE UPWARD SPIRAL OF GASOLINE PRICES**

Although gasoline prices have traditionally risen during the summer driving months of June-August, in the past three years the seasonal upswing has turned into a much more violent price spiral of a sharp price spike followed by a modest decline with stabilization at a higher level than previous years. We have also had out of season price spikes, which exhibit the same roller coaster and ratchet.

A refinery fire here, a pipeline break there, a blackout somewhere else, and prices go through the roof and stay high, because stocks are low and capacity is constrained. Stockpiles and capacity are determined by business decisions, not Mother Nature. How many times does this have to happen before policy makers do something about it? Perhaps policy cannot prevent accidents, although safety regulations could lower their likelihood, but it can definitely diminish the negative impact these accidents have on the public when they happen.

The underlying driver of this gasoline price ratchet has been an increase in the refiner/marketer share of the pump price, called the domestic spread, not foreign crude oil price increases. The domestic price ratchet has resulted from a combination of inadequate capacity and inadequate competition in the industry. The underlying tight market condition is the result of both increasing demand and business decisions that slowed the growth of long-term capacity. The price spiral occurs because suppliers who face weak competition find they can take unilateral actions in tight markets to quickly increase prices and do not have to respond quickly to increase supplies that might lower prices. The result is an increase in profits and an upward spiral of prices.

Energy markets are highly complex. Their volatility poses particular challenges for policy and economic analysis. The key elements are the supply-side difficulties of inadequate competition, insufficient production, transportation and storage interacting with the demand side challenges of providing for a continuous flow of energy to meet inflexible demand, which is subject to seasonal consumption patterns. Public policy must recognize all three factors of supply, demand and competition, if the price ratchet is to be broken in a consumer-friendly fashion.

## **SUPPLY-SIDE FUNDAMENTALS**

On the supply side of the gasoline market, because of the nature of the underlying molecules, the production, transportation and distribution networks are extremely demanding, real time systems. Energy is handled at high pressure, high temperature and under other physical conditions that are, literally, explosive. These systems require perfect integrity and real time balancing much more than other commodities.

Transportation and distribution infrastructure is extremely capital intensive and inflexible. Many sources of energy are located far from consumers, requiring transportation over long distances. The commodities are expensive to transport and store delivered over a network that is sunk in place with limited ability to expand in the short and medium term.

Refineries and pipelines, two key parts of the gasoline distribution chain, are not only capital intensive, but they take long lead times to build. They have significant environmental impacts. In the short term, their capacity is relatively fixed. Refineries must be reconfigured to change the yield of products. Although oil pipelines have largely depreciated their historic, sunk costs, expansion would be capital intensive. Thus, pipeline capacity is generally fixed capacity.

Accidents have a special role in networks such as these. Because of the demanding physical nature of the network, they are prone to happen. Because of the volatile nature of the commodity, accidents tend to be severe. Because of the integrated nature of the network and demanding real time performance, accidents are highly disruptive and difficult to fix.

Given the basic infrastructure of supply in the industry, the availability of stocks to meet changes in demand is the critical factor in determining the flexibility of supply. Under all circumstances, since output is slow to respond to price changes because of its inelasticity, stockpiles, storage and importation of product become a critical element of the gasoline market. Stocks are the key factor in policy responses to market power where supply is inelastic.

Every investigation of every product price spike in the past several years' points to unusually low stocks as a primary driver of price shocks. Who decides how much capacity to build, how much product to refine and how much gasoline to have on hand? Oil companies. They make those decisions to maximize their profits, given the industry fundamentals that they face.

## **BUSINESS DECISIONS KEEP MARKETS TIGHT**

There are two clearly identifiable trends affecting the supply side of the gasoline market: a reduction in capacity relative to demand and an increase in concentration.

In 1985 refinery capacity equaled daily consumption of petroleum products. By 2000, daily consumption exceeded refinery capacity by almost 20 percent. The problem is not simply that no new refineries have been built, but that in the past 15 years about 75 refineries were closed. Reductions in storage capacity and the number of gasoline stations of over ten percent have also taken place in just the past half-decade.

These reductions in capacity have been driven in part by a merger wave that has resulted in a significant increase in the concentration of ownership of refinery capacity and gasoline outlets. Four-fifths of regional refinery markets have reached levels of concentration that trigger competitive concerns, even by the standards adopted by the antitrust division of the Reagan administration's Department of Justice. In these markets, the largest four firms account for at least one-half and as much as three quarters of the refined product output. A similar trend has been in evidence at the level of gasoline stations.

Even more ominous for short-term price volatility is the fact that stockpiles have declined dramatically. Storage capacity has been reduced and economic reserves or reserves above what is needed just to keep the system running or have been slashed. The industry now typically has no more than a day or two of gasoline supplies above its operational minimum, compared to a week or so in the 1980s. Thus, there is little reserve capacity to dampen price increases.

The previous discussion focuses on horizontal concentration. Vertical integration between the segments of the industry may have an impact as well. Vertical integration by dominant firms may create a barrier to entry requiring entry at two stages of production, or foreclosing critical inputs for competitors in downstream markets. Vertical arrangements may restrict the ability of downstream operators to respond to local market conditions,

Vertical integration not only removes important potential competitors across stages of production, but also may trigger a wave of integrative mergers, rendering small independents at any stage extremely vulnerable to a variety of attacks.

Gasoline markets are vulnerable to these negative effects of vertical integration. Product must move downstream from the refinery or the tanker to the pump. Vertically integrated operations are closed to independent sources of supply. They may impose zonal pricing formulas or restrictions of sources of supply on their distribution outlets.

With vertical integration the market may be less responsive than it could be both in the short term, since competing product has difficulty getting into individual markets at the end of a vertically integrated chain and in the long term because new competitors in any market may have to enter at several stages of the business. The FTC found this to have had a substantial impact on the market in its study of the midwestern gasoline market.

The mergers and reduction of capacity have been driven by business decisions. Larger, more vertically integrated companies may be more efficient, but they can also exploit tight markets. Gasoline markets have been slow to respond to price increases. The price differentials that build up before product imports are used to increase supplies are far larger than the transportation cost of imports.

The tightening of supply reflects private business decisions in other ways. As suggested by the Federal Trade Commission report, individual companies now may have pricing power, not through collusion but through individual action. That is, with supply and demand tight and a small number of suppliers in each market, individual suppliers recognize that they can influence the price, at least for short periods of time, by withholding supplies. They are no longer the price takers we find in competitive markets; they become price makers in oligopolistic markets.

## **DEMAND**

The demand side of the market creates additional pressures and vulnerabilities to price spirals. The demand for gasoline does not respond quickly to price in the short term. When demand is inelastic as it is in the gasoline market, suppliers have a better chance of making price increases stick when there is little spare capacity. Increasing demand has reduced spare capacity.

The continuous flow of large quantities of product to meet highly seasonal demand is the central characteristic of the demand side of the market. Many discussions of the gasoline market start from the premise that people drive a lot, perhaps too much. But in order to design proper policies to deal with gasoline demand and how it affects the market, we must have an appreciation for why people drive as much as they do. Examining price and income elasticities leads to the conclusion that energy is a necessity of daily life. Recognizing this fact leads to policy choices that can have the greatest impact while imposing the least cost and inconvenience on consumers.

Gasoline consumption is determined by the physical and economic structure of daily life. People need to drive on a daily basis because of the way our communities are built and our transportation systems designed. Stores are far from homes. Homes are far from work. Social and after-school activities are dispersed. In most communities, mass transit is scarce and inconvenient. It is necessary to drive to get from here to there. We own more cars and drive more miles on a household basis over time. These trends and patterns have become stronger and more deeply entrenched as our society has become wealthier and the tendency for two-earner households has grown. For the past three decades there has been an almost perfect, one-to-one correspondence between economic growth and the growth of total miles driven.

The result of the underlying socioeconomic determinants of automobile travel is to render demand inelastic. The low elasticity of demand is the critical factor in rendering the gasoline market volatile and vulnerable to abuse. When demand is inelastic, consumers are vulnerable to price increases, since they cannot cut back on or find substitutes for their use of the commodity. When the most important market force in disciplining market power, demand elasticity, is as low as observed for gasoline, there are many opportunities to exercise market power.

Over the 1990s, gasoline consumption grew by a total of almost 20 percent, compared to the 1980s when it grew by only 10 percent. The number of drivers and passenger vehicles increased, as the driving age population expanded. Gasoline consumption per passenger vehicles grew by about 7 percent. About three quarters of that increase was caused by an increase in the number of miles driven and one quarter was caused by the shift to SUVs.

While the shift to SUVs was one striking feature of the 1990s, an equally striking and more important feature of the demand side was the failure of fuel efficiency to improve. If the fuel efficiency of autos had increased as rapidly in the 1990s as it did in the 1980s, autos would have been 20 percent more efficient, getting about 4 miles per gallon more, in 2000. (If there had not been a shift to SUVs, the average fleet efficiency would have been about 1 mile per gallon higher.)

## **CONSUMER-FRIENDLY POLICIES TO BREAK THE PRICE SPIRAL**

In summary, this analysis demonstrates that gasoline markets are volatile and suffer competitive problems. Market fundamentals (inadequate capacity and inelastic supply and demand), market structures (ownership concentration and vertical integration), corporate conduct (capacity and production decisions), and market performance (price and profits) all point toward the potential for the abuse of market power.

Vigorous and broad based public policies should be pursued to implement permanent institutional changes that reduce the chances that markets will be tight and reduce the exposure of consumers to the opportunistic exploitation of markets when they become tight. To achieve this reduction of risk, public policy should be focused on achieving five goals.

### **Restore reserve margins by developing both efficiency and production.**

- (1) Increasing fuel efficiency at the rate achieved in the 1980s in the decade ahead would save about 1.5 million barrels per day. That rate of progress could be sustained over several decades.
- (2) Increasing refinery capacity by 10 percent, either through expansion at existing refineries or redevelopment of less than one half the refineries closed in the past decade, would add another 1.5 million barrels per day.
- (3) To the extent investments to meet clean air standards are a barrier to capacity expansion, public policy should find a way to lower the cost of compliance, directly through subsidies or indirectly through research on new technologies, rather than lower the standards.

**Increase market flexibility.**

(4) Expand stockpiles with tax incentives to hold and draw down supplies in the face of price increases, and/or mandatory stocks requirements as a percentage of sales, and/or government owned/private operated supplies could add to existing stockpiles.

(5) Larger, more uniform product markets should be developed to expand to increase supply responsiveness, without lowering clear air standards.

**Promote a more competitive industry**

(6) Further concentration of the petroleum industry should be resisted by vigorous enforcement of the Department of Justice Merger Guidelines.

(7) Restrictive marketing practices, such as zonal pricing and franchise restrictions on supply acquisition should be investigated and discouraged.

**Deter private actions that make markets tight or exploit market disruptions.**

(8) Withholding of supply should draw immediate and intense public and governmental scrutiny through a joint federal state task force of attorney's general.

(9) The task force or some other entity should develop ongoing databases and information for evaluating industry structure and conduct.

(10) The incentives to manipulate markets can be reduced by imposing a windfall profits tax that triggers when specific circumstances raise prices and profit sharply.

(11) Ultimately, market manipulation could be made illegal.

**Provide adequate energy assistance for low-income households.**

(12) Assistance policies directly targeted at transportation expenditures should be considered.

(13) Energy assistance programs should be indexed to energy prices.